Heat Source, Flammable Liquid and Combustible Material

Lawrence Berkeley National Laboratory Lessons Learned

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Concern Statement: Never used combustible materials near flammable liquids and a heat source.

Applicable to: All Lab staff that work with a heat source in combination with flammable liquids and combustible materials.

Incident: A lab employee was working in the fume hood stamping 384-well glycerol stock plates. The purpose of this activity was to perform additional QC checks of glycerol stock plates. The process uses a Bunsen burner, hand-held 384 pin-stamping tool, small bath of 100% ethanol, glycerol stock plates, and bioassay plates. After submerging the stamping tool into the ethanol bath, the employee passed the pins over the open flame. A droplet of ethanol fell onto a paper towel placed under the plates. The paper towel and ethanol bath caught fire and began to burn. The supervisor whose office is adjacent to the lab was immediately notified, and he extinguished the small fire with an ABC fire extinguisher. There was no injury to the employee, smoke inhalation to the lab workers, or damage to the fume hood.

Cause: The set-up protocol did not call for paper towels to be placed under the ethanol bath. As a measure to improve laboratory hygiene, the employee decided to place the combustible paper towel underneath the plastic ethanol bath and hand-held stamping tool. Employee may also have saturated the pins and did not tap the stamping tool lightly against the side of the bath to remove all the excess ethanol.

Recommended Actions:

- The employee has been reminded not to deviate from the protocol; it was also re-emphasized that no combustible paper towels are to be placed underneath the ethanol bath.
- The hand-held stamping pin was tested to determine if it was a defective device. Tests were negative. Attempts to re-enact dripping ethanol dripping from the pins after being saturate could not be duplicated. It was placed back in service.
- The lid shown in the picture was not immediately accessible. The presence of this lid would have made extinguishing the flame much easier. The operators have been trained to have the lid immediately available and this has been added to the operator protocol for the procedure and has been identified as an area for additional training.

Further Information

Any additional assistance or questions regarding this incident or the lessons learned may be directed to Jimmy Choy (925) 296-5649.

For other lessons learned, go to: http://www.lbl.gov/ehs/html/lessons_learned.htm